King County
Department of Natural Resources and Parks
Wastewater Treatment Division
Technology Assessment and Resource Recovery

biosolids recycling

2003 Summary

Where do the biosolids go?

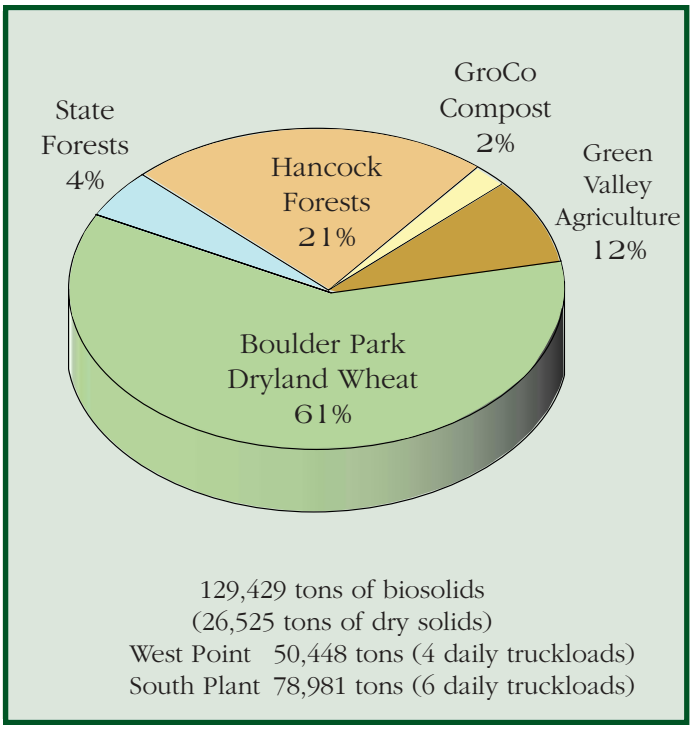
For more than 30 years, King County has been turning wastewater solids into a natural resource called biosolids. This valuable soil amendment can be used to build soils, revegetate barren areas, and fertilize crops and other plants.

All King County's biosolids are used beneficially in agriculture and forestry or as an ingredient in compost. When recycled into the soil, biosolids will:

- retain soil moisture
- add organic matter
- slowly release essential nutrients
- reduce erosion
- improve soil tilth

Harvest of wheat fields fertilized with biosolids.

King County was a pioneer in recycling biosolids. While other cities were landfilling and ocean-dumping their wastewater solids, King County was working with the University of Washington to find the safest, most effective uses for this nutrient-rich material. Our biosolids easily meet the most stringent quality requirements for land application. The U.S. Environmental Protection Agency has twice recognized our program as the best in the nation.



129,429 tons of biosolids
(26,525 tons of dry solids)
West Point 50,448 tons (4 daily truckloads)
South Plant 78,981 tons (6 daily truckloads)

King County spent about $5 million in 2003 on its biosolids management program. The county's entire annual production of 129,000 tons was recycled at an average cost of less than $40 per wet ton. Most of that budget is spent on transportation and land application. The program generated more than $225,000 in revenue, including fertilizer fees from customers.

Transportation to project sites	56%
Land application	22%
Land application support (monitoring, research, permits)	15%
Staff wages and benefits	7%
Total Budget	100%

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Partnerships in Recycling

1 Boulder Park Soil Improvement Project encompasses more than 40,000 acres of dryland grain crops in Douglas County. More than 100 landowners and farmers participate in this project. Biosolids from other agencies are also recycled at this site, helping to satisfy local demand. In 2003, 4,525 acres of wheat were fertilized with King County biosolids.

2 Green Valley Project in the Yakima Valley includes more than 35,000 acres of hops, corn, and managed rangeland. The project sponsors are also using biosolids and crop residuals to create a compost. In 2003, the following crops received King County biosolids: 1,242 acres of rangeland, 463 acres of pasture grass, 213 acres of hops, 132 acres of grapes, and 18 acres of corn.

3 GroCo Compost has been produced and marketed by a private company, GroCo Inc., for more than 20 years. This composted mixture of biosolids and sawdust is used in residential and commercial landscaping, home gardens and soil restoration.

4 Mountains to Sound Greenway (MTSG) Biosolids Forestry Program is a partnership of private and public agencies that uses biosolids to fertilize and preserve working forests in eastern King County. In 2003, biosolids were applied to 280 acres of state forestlands and to 973 acres of Douglas-fir plantations in Hancock's Snoqualmie Forest.

Research and Education

King County is a founding member of the Northwest Biosolids Management Association (NBMA), which encourages environmentally sound management of biosolids. Members share technical and educational information with the public and regulatory agencies.

In 2003, the NBMA funded research on crop yield, nutrient cycling, environmental effects and biosolids quality. These studies were performed by researchers at the University of Washington, Washington State University, and the University of Arizona National Science Foundation Water Quality Center.

Continual Improvement

In 2002, King County began operating an Environmental Management System (EMS) for biosolids, as a charter member of a nationwide program. Under an EMS, biosolids are managed by higher standards than required by law. Goals of a biosolids EMS include:

- controlling and improving biosolids quality
- improving internal communications
- increasing public acceptance and confidence
- lowering costs

An independent auditor will be reviewing King County's Environmental Management System in early 2004.

The Biosolids Team

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For more information on biosolids recycling or for tours or lectures, see our Web pages at http://dnr.metrokc.gov/WTD/biosolids/ or call 206-684-1247.

This information is available in alternative (or accessible) formats on request at 206-684-1247 (voice) or 711 (TTY).